

**SMALL NAVIGATION PROJECT**

# **RED BROOK HARBOR**

## **BOURNE**

## **MASSACHUSETTS**

### **DETAILED PROJECT REPORT**



**DEPARTMENT OF THE ARMY**  
**NEW ENGLAND DIVISION, CORPS OF ENGINEERS**  
**WALTHAM, MASS.**

**JUNE 1968**

<b>REPORT DOCUMENTATION PAGE</b>				<i>Form Approved</i> <b>OMB No. 0704-0188</b>	
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NEDED-R(21 June 68) 2d Ind

SUBJECT: Detailed Project Report for Small Navigation Project,  
Red Brook Harbor, Bourne, Massachusetts

DA, New England Div., CE, Waltham, Mass. 02154 23 October 1968

TO: Chief of Engineers, ATTN: ENGCW-PD

1. In accordance with ER 1165-2-14, paragraph 14(5), there are inclosed twelve (12) sets each of the 1st and 2d Indorsements, revised pages 10, 12, and 22 of the report and comments of the Federal Water Pollution Control Administration, all for insertion in the 12 copies of the report retained in your office. Comments in paragraphs 3 and 4 of the 1st Indorsement have been reflected in the revised text.
2. The Governor of Massachusetts has been informed of the proposed project and his comments endorsing the project are inclosed for inserting in Appendix C of the report.
3. Members of Congress and the Governor of the Commonwealth of Massachusetts were notified of formal adoption of the project by letters dated 21 October 1968. The Massachusetts Department of Public Works and the Selectmen of Bourne were notified of project approval on 23 October 1968.

7 Incl  
as (12 cys each)

FRANK P. BANE  
Colonel, Corps of Engineers  
Division Engineer

ENGOW-PD (25 June 68) 1st Ind

SUBJECT: Detailed Project Report for Small Navigation Project - Red Brook Harbor, Bourne, Massachusetts

DA, CofEngrs, Washington, D. C. 20315

19 August 1968

TO: Division Engineer, New England

1. The draft report is considered satisfactory subject to the following comments.
2. The estimate of first costs is based on use of a bucket dredge with scow disposal in an approved off shore disposal ground. An explanation should be included in the report stating why use of a hydraulic dredge with disposal in diked disposal areas was eliminated.
3. In view of the existing capacity of Red Brook Harbor for 675 boats in the anchorage and 68 in berths and the present size of the fleet, 338 boats, the statement in paragraph 39 that benefits to the existing fleet would result from alleviation of overcrowded mooring conditions is not clear. The report should include an estimate of the number of moorings required to accommodate the 4,000 existing transient boats. If the present harbor capacity exceeds the present demand, benefits from new boats comprising growth of the home based fleet and increase in the number of transient boats will not result until the existing harbor capacity is exceeded.
4. Paragraph 52 states that FWPCA was consulted. The results of this consultation should be included in the report.
5. The item of local cooperation, paragraph 13e of EM 1120-2-113, pertaining to reservation of spaces adequate for accommodation of transient boat traffic should be used in view of the large number of transient boats using the harbor.
6. Provided the Division Engineer satisfies himself concerning these comments, the Governor of Massachusetts should be informed of the project proposal and official state endorsement obtained. After receipt of favorable State and agency comments fully endorsing the proposal, the Red Brook Harbor project may be considered formally approved under Section 107 of the 1960 River and Harbor Act, as amended. Authority is then granted to issue simultaneous notification to the concerned members of Congress and the State Governor informing them of the formal project approval and adoption under Section 107. The notification should describe the project and required local participation. For record purposes, the date of notification is considered to be the date of the final project approval and adoption.

ENGW-PD (25 June 68) 1st Ind

19 August 1968

SUBJECT: Detailed Project Report for Small Navigation Project - Red Brook Harbor, Bourne, Massachusetts

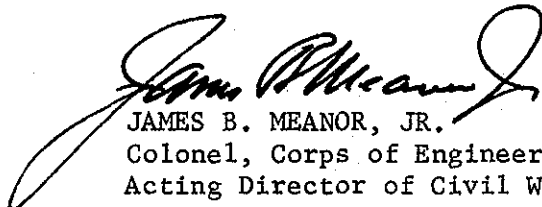
7. The Red Brook Harbor project will take its place on the backlog of approved Section 107 projects in accordance with paragraph 17, ER 1165-2-14. Authority is granted to commence project preconstruction work, including preparation of plans and specifications. The following work allowance is established to cover preconstruction work under Section 107.

<u>Location</u>	<u>Code 902-</u>	<u>Amount</u>
Red Brook Harbor, Bourne, Mass.	216	\$12,000

8. Allotment of \$12,000 under appropriation 96X3122 Construction, General will be sent by separate communication.

FOR THE CHIEF OF ENGINEERS:

wd all incl

  
JAMES B. MEANOR, JR.  
Colonel, Corps of Engineers  
Acting Director of Civil Works



DEPARTMENT OF THE ARMY  
NEW ENGLAND DIVISION, CORPS OF ENGINEERS  
424 TRAPELO ROAD  
WALTHAM, MASSACHUSETTS 02154

IN REPLY REFER TO:

NEDED-R

21 June 1968

SUBJECT: Detailed Project Report for Small Navigation Project -  
Red Brook Harbor, Bourne, Massachusetts

Chief of Engineers  
ATTN: ENGCW-PD

1. In accordance with ER 1165-2-14, there are submitted for review and comment twelve copies of an advance draft of the subject report.
2. Responsible officials of the Commonwealth of Massachusetts and the Town of Bourne concur in the recommended project and have given firm indications that the requirements of local cooperation would be met. Formal assurances of participation will be obtained from the Commonwealth and the Town during preparation of final design of the project.
3. The plans and specifications will be prepared in accordance with the Detailed Project Report as approved. Funds in the amount of \$8,000 for preparation of the plans and specifications and \$107,000 for the Federal share of construction will be required. The local share will be \$115,000 or 50% of the estimated project cost.
4. Formal comments of the Governor of Massachusetts will be requested after approval of the advance draft.

Incl  
as (12 cys)

F. R. DAY  
Lt. Colonel, Corps of Engineers  
Acting Division Engineer



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NEW ENGLAND DIVISION, CORPS OF ENGINEERS  
424 TRAPELO ROAD  
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21 June 1968

DETAILED PROJECT REPORT  
SMALL NAVIGATION PROJECT

RED BROOK HARBOR, BOURNE, MASSACHUSETTS

Pertinent Data

1. Purpose. To provide for expansion of the existing anchorage facilities at Red Brook Harbor and the adjacent coves to meet present needs and provide for anticipated greater future use.
2. Location. Barlows Landing and Hen Cove are located in the town of Bourne on the east side of Buzzards Bay 5 miles south of the western entrance to the Cape Cod Canal.
3. Existing Project. There is no existing project at Red Brook Harbor or adjacent coves. The nearest Federal navigation project is the Cape Cod Canal.
4. Improvement Desired. An 8-foot deep, 100-foot wide channel from Pocasset Harbor around both ends of Bassett Island with branch channels of the same dimensions leading into Barlows Landing, Hen Cove, Red Brook Harbor and Hospital Cove; and establishment of a suitable anchorage 8 feet deep at each of these locations.
5. Recommended Improvement. An entrance channel 6 feet deep, 100 feet wide, leading from deep water in Pocasset Harbor around the north end of Bassett Island into a 14.5-acre, 6-foot deep anchorage at Hen Cove and into a 10-acre, 6-foot deep anchorage at Barlows Landing.

6. Estimated Costs.

Dredging 6-foot deep channel and anchorages - 70,000 c. y. of ordinary material @ \$2.50 c. y.	\$175,000
Contingencies	26,000
Engineering & Design	*12,000
Supervision & Administration	<u>17,000</u>
	\$230,000

\* Excludes \$22,500 project study costs

7. Apportionment of First Cost.

Federal

Corps of Engineers 50% of \$230,000	\$115,000
Coast Guard: Navigation Aids	<u>1,050</u>
Total Federal	\$116,050

Non-Federal

Cash contribution: 50% of \$230,000	\$115,000
2 Public Landings (self-liquidating) berthing, parking lots, fuel and water supplies	<u>10,000</u>
Total Non-Federal	\$125,000

8. Annual Costs.

Federal and Non-Federal:

Interest and Amortization (50 yrs @ 3-1/4%) (\$230,000 x 0.04073)	\$ 9,367
Maintenance Anchorages & Channel Navigation Aids	<u>9,000</u> <u>145</u>
Total Annual	\$ 18,512



9. Benefits.

<u>Recreational Craft</u>	<u>General</u>	<u>Local</u>	<u>Total</u>
Existing boats	\$ 425	\$ 425	\$ 850
New boats added	22, 100	22, 100	44, 200
Transients	<u>1, 325</u>	<u>1, 325</u>	<u>2, 650</u>
	\$23, 850	\$23, 850	\$47, 700
	50%	50%	100%

10. Benefit-Cost Ratio.

$$\frac{\$47,700}{\$18,512} = 2.6$$

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21 June 1968

DETAILED PROJECT REPORT  
SMALL NAVIGATION PROJECT  
RED BROOK HARBOR, BOURNE, MASSACHUSETTS

AUTHORITY

1. This report is submitted under General Authority contained in Section 107 of the River and Harbor Act of 1960, as amended in 1965. Specific authority was provided by 1st Indorsement dated 1 March 1966 from the Chief of Engineers in reply to a letter dated 21 February 1966 from the Acting Division Engineer, New England Division, Subject: "Red Brook Harbor, Bourne, Massachusetts - Reconnaissance Report."

PURPOSE AND EXTENT OF STUDY

2. Detailed engineering and economic studies were undertaken to determine whether a Federal navigation improvement at Red Brook Harbor and adjoining coves is feasible and economically justified. A public hearing was held in Bourne on 26 August 1965 to obtain information concerning the improvement desired and to permit everyone in the locality an opportunity to present his views.

3. A hydrographic survey of Red Brook Harbor and adjoining coves was made during November and December 1966. Additional data was obtained from field investigations and from information supplied by local interests. All Federal, State and local agencies known to be interested or affected by navigation improvement of the area were consulted. Conferences were held with local officials to discuss considered improvements and the attendant requirements of local cooperation.

DESCRIPTION

4. Situated on the westerly shore of the Cape Cod peninsula, the town of Bourne occupies over 20,000 acres of land encompassing both sides of the Cape Cod Canal. Red Brook Harbor is located in

the southwestern part of the town in a summer resort section where there are many facilities available for land and water-oriented recreational activities. The main harbor, together with a number of smaller adjacent coves, forms one of the best naturally protected harbors of refuge in southern Massachusetts. Bassett Island, lying just offshore on the west side of the harbor, affords excellent natural protection from the open waters of Buzzards Bay.

5. There are two navigation channels leading from deep water in Buzzards Bay and Pocasset Harbor into Red Brook Harbor. One is a naturally deep channel extending around the northern end of Bassett Island; the other, a more frequently used channel, leads around the southern end of Bassett Island. The latter channel was dredged by the Commonwealth of Massachusetts in 1959-60.

6. The mean range of tide in Red Brook Harbor, and the adjoining coves, is 4.0 feet and the spring range is 5.0 feet. The area is shown on U. S. Coast and Geodetic Charts Nos. 249, 251, and 1208 and on the drawings accompanying this report.

#### TRIBUTARY AREA

7. Bourne is one of the fastest growing towns in southeastern Massachusetts. After remaining relatively stable for the 45-year period prior to 1955, the resident population of the town almost tripled between 1955 and 1960. U. S. Census figures show that there were 14,011 permanent residents in the town in 1960, and an additional 6,000 summer residents are expected annually.

8. The largest contributors to the economy of the town are the wholesale and retail trade firms and the service industries.

9. As in other resort communities of Cape Cod, substantial seasonal employment is found in catering to summer residents and to the many tourists who frequent the area. About one-half of the 2300-acre Otis Air Force Base lies within the town, with an annual payroll of several million dollars, which aids substantially in bolstering the economy of the town year round.

10. The New York, New Haven and Hartford Railroad provides freight service to the town. The vicinity of Red Brook Harbor is

served by numerous bus and truck routes operating over a network of primary and secondary roads.

### BRIDGES

11. There are no bridges which would be affected by any considered improvement in Red Brook Harbor or any of the adjoining coves.

### PRIOR REPORTS

12. Red Brook Harbor has not previously been the subject of a Federal navigation study.

### EXISTING CORPS OF ENGINEERS PROJECT

13. The nearest Federal project, the Cape Cod Canal, is located five miles north of Red Brook Harbor. This project provides for an open canal 17.5 miles long, connecting Buzzards and Cape Cod bays. The canal is 32 feet deep, with a width of 540 feet in the land cut, 500 feet wide in a straight channel in Buzzards Bay to Wings Neck and 700 feet wide beyond Wings Neck. Mooring basins are located at both ends of the canal. The west basin is located on the south side near Hog Island and is 350 feet wide, 32 feet deep and 3,300 feet long. The western entrance of the canal passes three and one-half miles to the west of Red Brook Harbor.

### OTHER IMPROVEMENTS

14. The Commonwealth of Massachusetts has completed a number of harbor improvements in the area. In 1955, a 130-foot long groin was built normal to the shoreline in Hen Cove. Also, in connection with a nearby beach nourishment project, the State in 1960 dredged a 10-acre anchorage basin in Hen Cove which varies from 5 to 8 feet in depth. In 1959-60, an 8-foot deep channel, 100 feet wide was dredged by the State from the deep water of Pocasset Harbor around the southern end of Basset Island up to the entrance to Red Brook Harbor. At the same time, an 8-foot deep anchorage was dredged in the harbor itself. Available records

indicate that the State has spent over \$220, 000 during the past eleven years on waterway improvements in and around Red Brook Harbor.

#### TERMINAL AND TRANSFER FACILITIES

15. There are two fully equipped boatyards located in Red Brook Harbor. These yards are capable of providing storage and maintenance services for boats up to 50 feet in length. The available mooring and berthing facilities can accommodate up to 140 boats at a time, and are filled to capacity throughout the boating season, with many boats "doubling up" at the moorings. There are three public landings with adjacent launching ramps located at Barlows Landing, Hen Cove and Red Brook Harbor, respectively. An unpaved launching ramp suitable for use at half tide is located at the foot of a town road north of Hospital Cove.

16. No commercial shipping or fishing fleets currently utilize the facilities of Red Brook Harbor or any of the adjoining coves and none would be directly affected by the considered improvement. It is not likely that the completion of the improvement will be instrumental in inducing any such firms to locate in the area, although recreational or sport fishing, from boats, will certainly be increased by improvement of the harbor.

17. There are two yacht clubs in the area: the Buzzards Yacht Club in the Pocasset-Cataumet area, and the Red Brook Yacht Club in Pocasset.

#### IMPROVEMENT DESIRED

18. In order to determine the extent of improvement desired, a public hearing was held at Bourne, Massachusetts on 26 August 1965. Local interests presented two plans of improvement for consideration.

a. The first plan, offered by a spokesman for the Shore and Harbor Committee of the Town of Bourne, consisted of an 8-foot deep, 100-foot wide channel from Pocasset Harbor around both ends of Bassett Island, with branch channels of the same dimensions leading into Barlows Landing, Hen Cove, Red Brook

Harbor and Hospital Cove; and the establishment of a suitable anchorage 8 feet deep at each of these locations.

b. The other plan involved the construction of a stone-lined channel through the lower end of Bassett Island from Pocasset Harbor directly into the entrance of Red Brook Harbor.

19. A third plan of improvement, forwarded to the Division Engineer prior to the hearing, consisted of a channel 12 feet deep and 100 feet wide around the southern end of Bassett Island; the straightening of the northern channel and its connection with the southern channel at the entrance to Red Brook Harbor; enlarging and deepening to 12 feet the Red Brook Harbor mooring basin; the building of a breakwater at the harbor's entrance; the construction of hurricane gates across the channels between Scraggy Neck and Bassett Island and between Wings Neck and Bassett Island.

#### EXISTING AND PROSPECTIVE COMMERCE

20. Red Brook Harbor and the adjoining coves are used almost exclusively by recreational craft. Little commercial use is being made of the waterways at present and there are no indications that such activity will develop on a large scale as a result of any considered improvement.

21. It has been reported that during an average 120-day boating season the two local boatyards provide some type of service to an estimated 2,500 boat owners. Total revenue from these customers exceeds \$250,000.

#### VESSEL TRAFFIC

22. There are no published records available which give any information on vessel traffic in Red Brook Harbor or in any of the adjoining coves. Based on information furnished by local marine interests, each of the 338 locally based recreational craft makes an average of two trips in and out of the area during each week of the 120-day boating season. On this basis, a total of almost 12,000 trips in and out of the harbor are made each year by the locally

based fleet. Improvement of the area's waterways will result in expansion of the existing fleet which, in turn, will result in a proportionate increase in vessel traffic.

23. As reported by the Shore and Harbor Committee, the existing locally based recreational fleet that would benefit from navigation improvements consists of 338 boats ranging in length from 12 to 50 feet with a market value of \$1,180,000. This is exclusive of approximately 500 rowboats, sailboats and outboards which would not benefit from any navigation improvement other than improved landing facilities.

24. In addition to the locally based fleet, it has been estimated by the Division of Motorboats of the Commonwealth of Massachusetts that during the boating season as many as 4,000 recreational boats make use of the waterways in and around Red Brook Harbor. Many of these visits, lasting from a few hours to several days, are made to pick up supplies, obtain minor repairs, refuel, seek refuge during periods of adverse weather, etc. With the rapid growth in recreational boating which has taken place throughout New England, particularly in summer resort areas such as Bourne, a relatively undeveloped area such as exists in this locale has an extraordinary potential for development.

#### DIFFICULTIES ATTENDING NAVIGATION

25. The problems confronting the Town of Bourne are similar to those at other shorefront communities on Cape Cod. Construction of navigation facilities has failed to keep pace with the growth of recreational boating in the area. Lack of space has resulted in serious overcrowding in naturally deep coves and harbors of the town and has prevented expansion of the locally based fleet. Local interests claim that the entrance channels around Bassett Island do not provide enough width and depth for maneuvering of small craft in the areas. Public landing facilities are available at both Hen Cove and Barlows Landing but there is insufficient depth in the adjacent waters to provide suitable anchorages or approach channels to the landings.

#### WATER POWER AND OTHER SPECIAL SUBJECTS

26. All of the waterways in and around Red Brook Harbor which are under consideration for improvement are tidal. There



are no existing problems involving water power, pollution, flood control, or related subjects. The locations of any spoil disposal areas required for dredging improvement will be coordinated with the U. S. Fish and Wildlife Service to insure that any adverse effects on existing fish and wildlife resources will be minimized. The report of the U. S. Fish and Wildlife Service is included as Appendix A of this report. There are no cables or pipelines crossing the area under consideration for navigation improvement which would be affected.

### PROJECT FORMULATION

27. Consideration was given to the plan of improvement presented at the public hearing by the Shore and Harbor Committee of the Town of Bourne. The committee requested channels 100 feet wide and 8 feet deep from Pocasset Harbor around both ends of Bassett Island, with branch channels of the same depth leading into Barlows Landing, Hen Cove, Red Brook Harbor and Hospital Cove; and the establishment of a suitable anchorage at each of these locations.

28. Hydrographic surveys, made during the course of this study, indicate that the existing channels around Bassett Island and existing anchorage areas in Hospital Cove and Red Brook Harbor provide dimensions in excess of the desired improvement. Data available does not substantiate the need for the desired eight-foot project depth. Of the 338 boats in the existing locally based recreational fleet, only one has a draft in excess of six and one-half feet.

29. By letter dated 25 October 1965, officials of the Town of Bourne acknowledged that a six-foot depth would suffice to meet the area's navigational needs. The Waterways Division of the Massachusetts Department of Public Works is of the opinion that a six-foot project depth would accommodate well over ninety percent of the more than 4,000 recreational craft which use the waterways during an average boating season.

30. In view of the above, the desired plan of improvement was examined to determine if dredging to a depth of 6 feet would provide sufficient space to accommodate the recreational fleet. Hospital Cove and Red Brook Harbor have existing depths in excess

of 6 feet in over 85 percent of their entire areas. It was concluded that any enlargement of these anchorages would not provide enough additional space to warrant improvement. Hen Cove and Barlows Landing are located in densely populated areas and have existing public landing facilities.

31. A plan of improvement offered at the public hearing involved the construction of a stone-lined channel through the lower end of Bassett Island from Pocasset Harbor into the entrance of Red Brook Harbor. Since the southern entrance to Hospital Cove and the northern entrance to Barlows Landing and Hen Cove would serve as access to these anchorages, only about one-third of the recreational fleet would benefit from this improvement. Tidal currents in the vicinity of Bassett Island move material along the shore at right angles to the proposed channel, resulting in a need for training dikes or jetties on both sides of Bassett Island to stabilize and reduce maintenance of the channel. It is estimated that this plan would increase the total cost of improvement in the Red Brook Harbor area by \$175,000. Benefits to be derived by reducing the time of transit for one-third of the boats through the area would not be sufficient to justify the cost of the project.

32. Another plan of improvement was similar to that presented by the Shore and Harbor Committee except that it included construction of a breakwater at the entrance to Red Brook Harbor and hurricane gates across the channels between Scraggy Neck and Bassett Island and between Wings Neck and Bassett Island. In view of severe damages sustained from hurricanes along the eastern and southern coastal areas of the United States, the 84th Congress, 1st Session, adopted, 15 June 1955, Public Law No. 71 which authorized the Corps of Engineers to undertake a study of means to prevent the loss of human lives and damages to property from hurricane tidal flooding. A report on this subject covering Massachusetts coastal and tidal areas was printed as House Document 293, 89th Congress, 1st Session. During the course of the survey, several plans were studied for the protection of the Red Brook Harbor area in Bourne by means of dikes, barriers and gates, including a plan similar to that suggested above. Due to the scattered nature of tidal flood damage throughout the shorefront areas, none of the protection plans were justified.

33. No reports of damages to recreational craft moored in Red Brook Harbor caused by waves entering the harbor have been made known. The harbor is well sheltered from open waters of Buzzards Bay by Bassett Island and the surrounding mainland which offer considerable protection against storm damages other than hurricanes. In view of the lack of economic justification, no consideration was given to construction of a stone breakwater at the entrance at this time.

#### PLAN OF IMPROVEMENT

34. Selection of a plan of improvement was made on the basis of providing the maximum open anchorage area available in Hen Cove and Barlows Landing where the largest concentration of summer population and the local business center of Pocasset are located. These two coves are the only areas which do not have sufficient existing depths in Red Brook Harbor to meet the needs of present and prospective boating needs. These coves are adequately sheltered by surrounding land to accommodate a total of 220 small craft in open anchorage. Therefore, a plan of improvement has been developed that would best meet the needs of local boating interests by dredging a 10-acre anchorage at Barlows Landing and a 100-foot wide entrance channel leading into a 14.5-acre anchorage at Hen Cove, all to a depth of six feet below mean low water. Provision of an anchorage area at Barlows Landing of more than 10 acres would not be incrementally justified because the cost of dredging would exceed the benefit to be derived by any boats that would use the added area.

#### SHORELINE CHANGES

35. The proposed dredging at Barlows Landing and Hen Cove would cause no appreciable change in existing conditions and tidal currents. Therefore, no effect on the shoreline will result.

#### AIDS TO NAVIGATION

36. The United States Coast Guard has been consulted in regard to the need for establishing aids to navigation in the area considered for improvement. The U. S. Coast Guard report is included in

Appendix B. The first cost and annual maintenance costs for the necessary aids are \$1,050 and \$145, respectively.

### ESTIMATE OF FIRST COSTS

37. The estimated first cost of construction of the selected plan of improvement is based on soundings and random probings taken during the hydrographic survey made in November and December 1966. Construction would involve the removal of mud, sand and gravel by bucket dredging with scow disposal on an approved offshore dumping ground in lieu of hydraulic dredging with spoil disposal on diked upland areas. Onshore disposal was not considered feasible since all of the shore areas within an economical hydraulic disposal distance are occupied by summer homes or utilized as a fish and wildlife resource. In addition, the material to be dredged is of such a composition as to be unacceptable as beach fill for nearby beach areas. Local interests would be responsible for providing berthing areas at the existing public landings, with depths commensurate to the Federal project. Aids to navigation would be provided by the U. S. Coast Guard. Dredging quantities are in terms of in-place measurement and include an allowance of one foot overdepth dredging and side slopes of one vertical to three horizontal. The estimated first costs are:

### PROJECT COST ESTIMATE

Project Features - (6-foot channel and anchorages)

<u>Cost Acct.</u>		<u>Estimated Cost</u>
<u>No.</u>	<u>Item</u>	<u>(May 1968 Prices)</u>
09	Dredging (ordinary material)	
	70,000 c. y. @\$2.50	\$ 175,000
	Contingencies	26,000
	Total	\$ 201,000
	Engineering & Design	12,000 <sup>(1)</sup>
	Supervision & Administration	17,000
	Total Construction Cost	\$ 230,000
	Aids to Navigation (Coast Guard)	1,050
	Public Landings (piers and berths)	10,000 <sup>(2)</sup>
	Total Project Cost	\$ 241,050

(1) Excludes \$22,500 project study costs.

(2) Self-liquidating.

### ESTIMATE OF ANNUAL CHARGES

38. Annual charges for the improvement have been estimated on the basis of a 50-year project life with Federal and non-Federal interest rates of 3-1/4 percent. Average annual maintenance charges are based on past experience with other harbors of similar size and condition. It is estimated that maintenance work will be needed every 10 years to restore project anchorage and channel depths. The maintenance dredging will involve the removal of 30,000 cubic yards each time. The total annual charges for the improvement are shown below.

#### Federal Investment

Corps of Engineers	\$115,000
Coast Guard	1,050
Total	<u>\$116,050</u>

#### Non-Federal Investment

Cash contribution	\$115,000
Public landings (berthing, parking lots, fuel and water supplies)	10,000
	<u>\$125,000</u>
Total Investment	\$241,050

#### Federal Annual Charges

Interest and Amortization (.04073 x 115,000) =	\$ 4,683
Maintenance dredging 3,000 c. y. x \$3.00	9,000
Aids to navigation	145
Total Federal	<u>\$ 13,828</u>

#### Non-Federal Annual Charges

Interest and Amortization (.04073 x 115,000) =	\$ 4,684
Total Annual Charges	\$ 18,512

## ESTIMATE OF BENEFITS

39. Improvement of Barlows Landing and Hen Cove by dredging adequate anchorage areas would allow for expansion of the locally based recreational fleet in these coves. Because of the large number of transient craft in the Bourne area during the summer boating season Red Brook Harbor on occasion becomes overcrowded under existing conditions. Many of the transient craft would move into the above mentioned coves upon improvement as the public landings are located closer to the summer resort business areas.

40. Recreational benefits have been computed on the basis of the amount of net annual return to the owners, if the boats were for hire. The net annual return is expressed as a percentage of the boats' average depreciated value. An estimate was made of the present annual return by taking into consideration such factors as shallow depths, lack of available berthing and mooring facilities, and other deficient navigational conditions. Then an estimate was made of the percent of optimum use which could be received under the proposed improvements. The difference or gain between the two conditions was considered the benefit. Twenty of the 338 boats in Red Brook Harbor and vicinity, which would benefit from the improvement, are located in the coves at Barlows Landing and Hen Cove. Benefits to this local fleet have been estimated to amount to \$850 after a proper reduction for time on cruise (See Table I, Page 15.)

41. The recreational boating industry is increasing steadily throughout the country at an average rate of about 6 percent a year. Expansion of the fleet at Red Brook Harbor, however, has not kept pace with this national rate due to inadequate anchorage areas, public access and marina facilities. On the basis of a 200 percent increase in the existing fleet over the next 50 years, it is estimated that 676 new boats will be added to the existing fleet of 338 boats. The total number of locally based boats using the waterways at the end of 50 years, exclusive of rowboats, is estimated to be 1,050 craft, including equivalent transients.

42. Studies have been made to determine the capacity of anchorages with free swinging overlapping circle moorings. It was concluded that with a tidal range of 4 feet, a depth of 6 feet below mean low water, and an average boat length of 30 feet, an ultimate saturation of 9 boats per acre would result. On this

basis, Red Brook Harbor proper has space in the existing anchorage for 675 boats including 70 boats presently on moorings provided by the local boatyards. The land area adjacent to these boatyards is occupied by large summer residences. As a result, the shorefront is not susceptible to expansion of berthing facilities. It is considered that an additional 20 slips could be constructed seaward of the present 68 berths without interfering with mooring space in the harbor.

43. In order to maximize benefits from development of anchorage space at Barlows Landing and Hen Cove, it was considered that these anchorages would become filled to their capacity of 220 boats during the lifetime of the project with the remainder of the fleet expansion taking place in Hospital Cove. This consideration was based on the fact that Hospital Cove is remotely located from the center of town and is completely surrounded by large private summer estates which allow little room for development of an adequate public landing under existing conditions. The need for a public landing at this cove will develop over the years as the other anchorages become overcrowded. As a result it is recommended that the Town of Bourne consider land acquisition and construction of a landing at Hospital Cove at an early date to provide access to the 18 acres of open anchorage space available.

44. Approximately 10 new boats are expected to be purchased and moored in the project anchorages immediately upon completion. Annual benefits for these boats have been computed at \$6,700 per year. (See Table II, page 16).

45. Local interests have estimated that approximately 800 of the 4,000 owners of existing transient boats that visit Red Brook Harbor each boating season would stop at these anchorages to shop in the business center of Pocasset or enjoy the recreational advantages of the area. The average length of stay is 3 days for a total of 2,400 boatdays. Based on a season of 120 days, this is equivalent to 20 locally based boats. After improvement, it is expected that the transient recreational fleet would increase by at least 50 percent, or an equivalent of 10 locally based boats. Benefits to the transients have been computed on the same basis as the local fleet and amount to \$1,750 and \$900, respectively.

46. The remaining space in the anchorages would be utilized by 160 new boats which would be uniformly added to the fleet over the 50-year life of the Federal project, so that the benefit would increase uniformly from zero, when the project is constructed, to \$98,650 at the end of 50 years. The equivalent average annual benefit from the growth of the fleet in these anchorages is estimated to be about \$37,500 (See Table IV).

47. The U. S. Fish and Wildlife Service reports that the entire Buzzards Bay area and the area in which the project is located support an outstanding finfish and shellfish resource; however, there are no commercial fishing vessels operating out of this area. It is not, however, considered that the improvement dredging would benefit the commercial fishing industry due to a lack of local marketing facilities.

48. The evaluated benefits for improvement of Barlows Landing and Hen Cove are summarized below:

#### SUMMARY OF ANNUAL BENEFITS

	<u>Number of Boats</u>	<u>General</u>	<u>Local</u>	<u>Total</u>
Locally based recreational fleet	20	\$ 425	\$ 425	\$ 850
New boats immediately purchased	10	3,350	3,350	6,700
Prospective (gradual growth)	160	18,750	18,750	37,500
Transients (existing fleet)	20	875	875	1,750
Transients (attracted)	<u>10</u>	<u>450</u>	<u>450</u>	<u>900</u>
Total	220	\$23,850	\$23,850	\$47,700

#### COMPARISON OF BENEFITS AND COSTS

49. A comparison of the estimated benefits of \$47,700 and the annual charges of \$18,512 results in a benefit-cost ratio of 2.6 to 1.0.



TABLE I. BENEFITS TO EXISTING FLEET  
120-Day Season

Harbor: Barlows Landing and Hen Cove									Date: May 1968			
TYPE OF CRAFT	LENGTH (feet)	No. of Boats	DEPRECIATED VALUE		PERCENT RETURN				ON CRUISE			
			AVERAGE	TOTAL	Ideal	% of Ideal		Gain	VALUE	Avg.	% of	Value
			\$	\$		Pres	Fut.		\$	Days	Season	\$
<u>RECREATIONAL FLEET</u>												
Outboards	10-20	2	1,000	2,000	12	90	100	1.0	20	--	--	---
Inboards	10-20	2	4,000	8,000	10	85	100	1.5	120	--	--	---
Cruisers	15-30	8	5,000	40,000	8	85	100	1.2	480	10	8	38
Aux. Sail	15-30	6	7,000	42,000	8	85	100	1.2	236	10	8	20
Sailboats	10-20	2	1,000	2,000	11	90	100	1.1	22	--	--	---
TOTALS		20		\$94,000					\$ 878			\$ 58 = \$820 Say \$850

TABLE II. BENEFITS TO RECREATIONAL BOATING - NEW BOATS (immediately purchased)

HARBOR: Barlows Landing and Hen Cove										DATE: May 1968			
TYPE OF CRAFT	LENGTH (feet)	No. of Boats	DEPRECIATED VALUE		PERCENT RETURN				ON CRUISE				
			AVERAGE	TOTAL	Ideal	% of Ideal		Gain	VALUE				
			\$	\$		Pres.	Fut.		\$	Avg. Days	% of Season	Value \$	
<u>RECREATIONAL FLEET</u>													
Outboards	10-20	1	2,800	2,800	12	---	100	12	335	--	--	---	
Inboards	10-20	2	5,000	10,000	10	---	100	10	1,000	--	--	---	
Cruisers	15-30	4	10,000	40,000	8	---	100	8	3,200	10	8	256	
Aux. Sail	15-30	3	10,000	30,000	8	---	100	8	2,400	10	8	192	
TOTALS		10	\$87,800						\$6,935	\$ 448 =			
											\$6,723		
										Say	\$6,700		

TABLE III. BENEFITS TO RECREATIONAL BOATING - EXISTING TRANSIENT

HARBOR: Barlows Landing and Hen Cove									DATE: May 1968							
TYPE OF CRAFT	LENGTH (feet)	No. of Boats	DEPRECIATED VALUE		PERCENT RETURN				ON CRUISE							
			AVERAGE	TOTAL	Ideal	% of Ideal		Gain	VALUE	\$	Avg. Days	% of Season	Value \$			
						Pres.	Fut.									
RECREATIONAL FLEET																
Outboards	10-20	3	1,000	3,000	12	90	100	1.2	36							
Inboards	10-20	3	4,000	12,000	10	85	100	1.5	180							
Cruisers	15-30	5	5,000	25,000	8	85	100	1.2	300							
	31-50	3	10,000	30,000	8	80	100	1.6	480							
Aux. Sail	15-30	4	8,000	32,000	8	85	100	1.2	384							
	31-40	2	12,000	24,000	8	80	100	1.6	382							
TOTALS		20	\$126,000						\$1,762							
									Say	\$1,750						

TABLE IV. BENEFITS TO RECREATIONAL BOATING - NEW BOATS - GROWTH

HARBOR: Barlows Landing and Hen Cove										DATE: May 1968		
TYPE OF CRAFT	LENGTH (feet)	No. of Boats	DEPRECIATED VALUE		PERCENT RETURN				VALUE	ON CRUISE		
			AVERAGE	TOTAL	Ideal	% of Ideal		Gain		Avg. Days	% of Season	Value \$
			\$	\$		Pres.	Fut.					
<u>RECREATIONAL FLEET</u>												
Outboards	10-20	30	3,000	90,000	12	-	100	12	10,800			
Inboards	10-20	25	6,000	150,000	10	-	100	10	15,000			
Cruisers	15-30	35	10,000	350,000	8	-	100	8	28,000	10	8	2,240
	31-50	15	15,000	225,000	8	-	100	8	18,000	10	8	1,440
Aux. Sail	15-30	25	10,000	250,000	8	-	100	8	20,000	10	8	1,600
	31-40	10	12,000	120,000	8	-	100	8	9,600	10	8	770
Sailboats	10-20	20	1,500	30,000	11	-	100	11	3,300	-	-	---
TOTALS		160		\$1,215,000					\$104,700			\$6,050
									6,050			
									\$ 98,650 x 0.3824 = \$37,524 -			
									Say \$37,500			

## APPORTIONMENT OF COSTS AMONG INTERESTS

50. Benefits resulting from navigation improvements at Barlows Landing and Hen Cove are expected to accrue primarily to recreational boating. In single-purpose recreational navigation projects, the first costs of the navigation facilities are shared equally by Federal and non-Federal interests. The apportionment is as follows:

<u>Item</u>	<u>Estimated Total Cost</u>	<u>Cost Apportionment</u>	
		<u>Federal</u>	<u>Non-Federal</u>
Cost Sharing	100%	50%	50%
Federal Project	\$230, 000	\$115, 000	\$115, 000
Aids to Navigation	1, 050	1, 050	---
Public Landings	10, 000	---	*10, 000
Project Study Cost	<u>22, 500</u>	<u>22, 500</u>	<u>---</u>
Total Project Cost	\$263, 550	\$138, 550	\$125, 000

\* Self-liquidating.

## PROPOSED LOCAL COOPERATION

51. The benefits to be derived from improvement of the existing anchorage areas at Barlows Landing and Hen Cove are entirely recreational in nature. Local interests would be required to contribute 50 percent of the first cost of construction of the Federal project, provide access channels and berthing areas at the two existing public landings of a depth equal to the project. In addition, local interests should be required to provide adequate parking areas and fuel and water supplies. The public landings must be open to the public on equal terms (See paragraph 55, Recommendations, for additional local cooperation required for construction of the project).

## COORDINATION WITH OTHER AGENCIES

52. All Federal and local agencies that might have an interest in the improvement at Red Brook Harbor and adjacent coves were notified of the public hearing. The U. S. Coast Guard, the U. S. Fish and Wildlife Service, the Federal Water Pollution Control

Administration, the Bureau of Outdoor Recreation, the Commonwealth of Massachusetts, and Town officials were consulted concerning the effects of the proposed improvement on their activities. The Fish and Wildlife Service anticipates no significant adverse effect on fishery resources as a result of the proposed improvement. The Service recommends that all dredged material be disposed in approved offshore dumping grounds in Buzzards Bay or on nearby beaches or upland area. Additional contact will be made with the U. S. Fish and Wildlife Service at the time of construction.

#### SCHEDULE FOR DESIGN AND CONSTRUCTION

53. It is estimated that preparation of contract plans and specifications for the project will require 4 months. The estimated cost is \$8,000. Construction of the project can be accomplished under one contract and completed in 6 months. Estimated expenditures are as follows:

a. Allocation to date:

Reconnaissance Report	\$ 2,500
Detailed Project Report	<u>20,000</u>
	\$ 22,500

b. Required to complete:

Plans and Specifications	\$ 8,000
Construction, Engineering during Construction, Supervision and Administration	<u>\$107,000</u>

Total Remaining Cost, Corps of Engineers \$115,000

#### CONCLUSIONS

54. The present and prospective needs of the rapidly expanding recreational fleet at Red Brook Harbor and adjacent coves would be met by a Federal navigation project at Barlows Landing and Hen Cove which would provide an anchorage at Barlows Landing of 10 acres, 6 feet deep, an entrance channel 100 feet wide, 6 feet deep, leading from Pocasset Harbor into Hen Cove, and a 14.5-acre anchorage, 6 feet deep, in Hen Cove. This improvement would result

in benefits to recreational boating that would yield a ratio of annual benefits to annual costs of 2.6 to 1. Local interests indicate that the improvement will meet their needs, and that the requirements of local cooperation will be met. All agencies known to be interested have been consulted and those replying have expressed no objection to the improvement. The proposed project meets the criteria for authorization under Section 107 of the River and Harbor Act of 1960, as amended in 1965.

#### RECOMMENDATION

55. The Division Engineer recommends Federal improvement of Red Brook Harbor, Bourne, Massachusetts, be authorized under provisions of Section 107 of the River and Harbor Act of 1960, as amended in 1965, to provide for: An entrance channel, 6 feet deep, 100 feet wide, leading from deep water in Pocasset Harbor into a 14.5-acre, 6-foot deep anchorage in Hen Cove and into a 10-acre, 6-foot deep anchorage at Barlows Landing. Since the project will be exclusively for the benefit of recreational boating, local interests should be required to contribute toward the project costs. The improvements are recommended subject to the conditions that local interests:

a. Provide a cash contribution of 50 percent of the first cost of Federal construction, presently estimated at \$115,000.

b. Provide, maintain and operate, without cost to the United States, two public landings, one in each cove proposed for improvement, with berthing depths alongside commensurate to the Federal channel depth, parking areas and other public use facilities open to all on equal terms.

c. Hold and save the United States free from damages which may result from construction and maintenance of the project.

d. Provide, without cost to the United States, all necessary lands, easements, and rights-of-way needed for the construction and maintenance of the project and for aids to navigation upon request of the Chief of Engineers, including suitable areas, if determined by the Chief of Engineers prior to construction to be required in the general public interest, for subsequent disposal of spoil, and also necessary retaining dikes, bulkheads and embankments thereof or the costs of such retaining works.

e. Establish a properly constituted and competent non-profit public body empowered to cooperate financially and to provide and operate essential local facilities open to all on equal terms.

f. Establish regulations prohibiting discharge of untreated sewage, garbage, and other pollutants in the waters of the harbor by users thereof, which regulations shall be in accordance with applicable laws or regulations of Federal, State and local authorities responsible for pollution prevention and control.

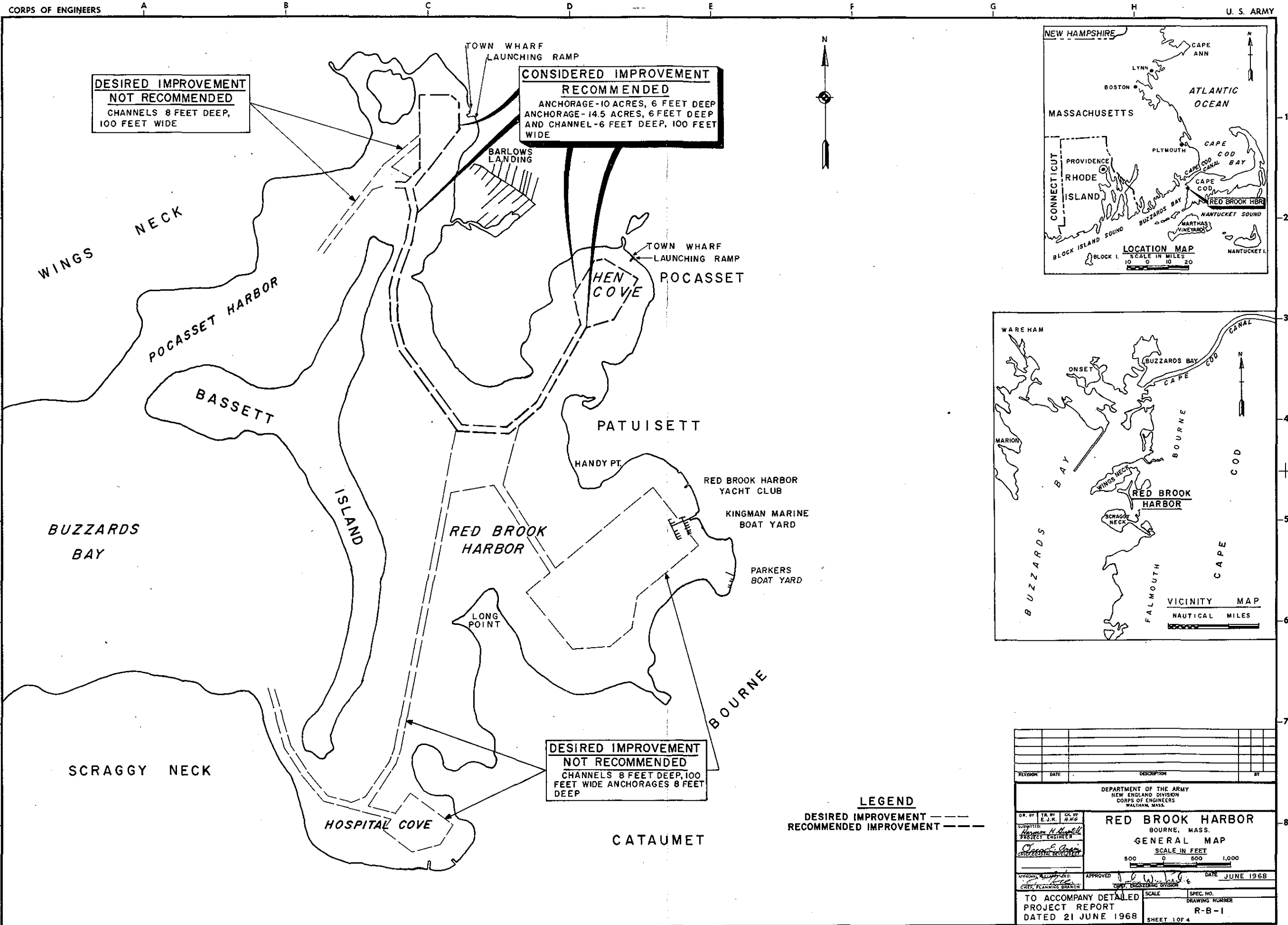
F. R. DAY

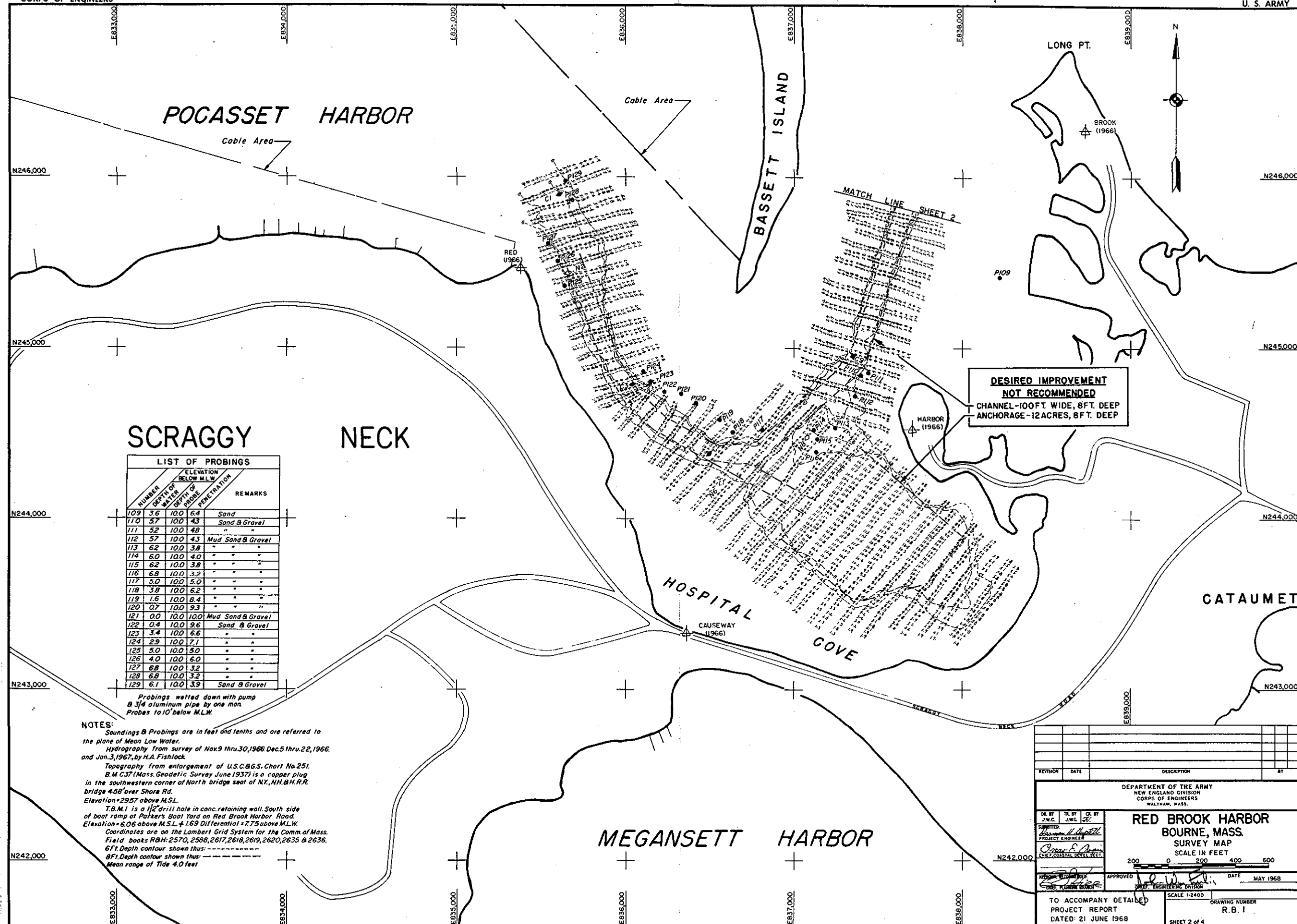
Colonel, Corps of Engineers  
Acting Division Engineer

4 Incls

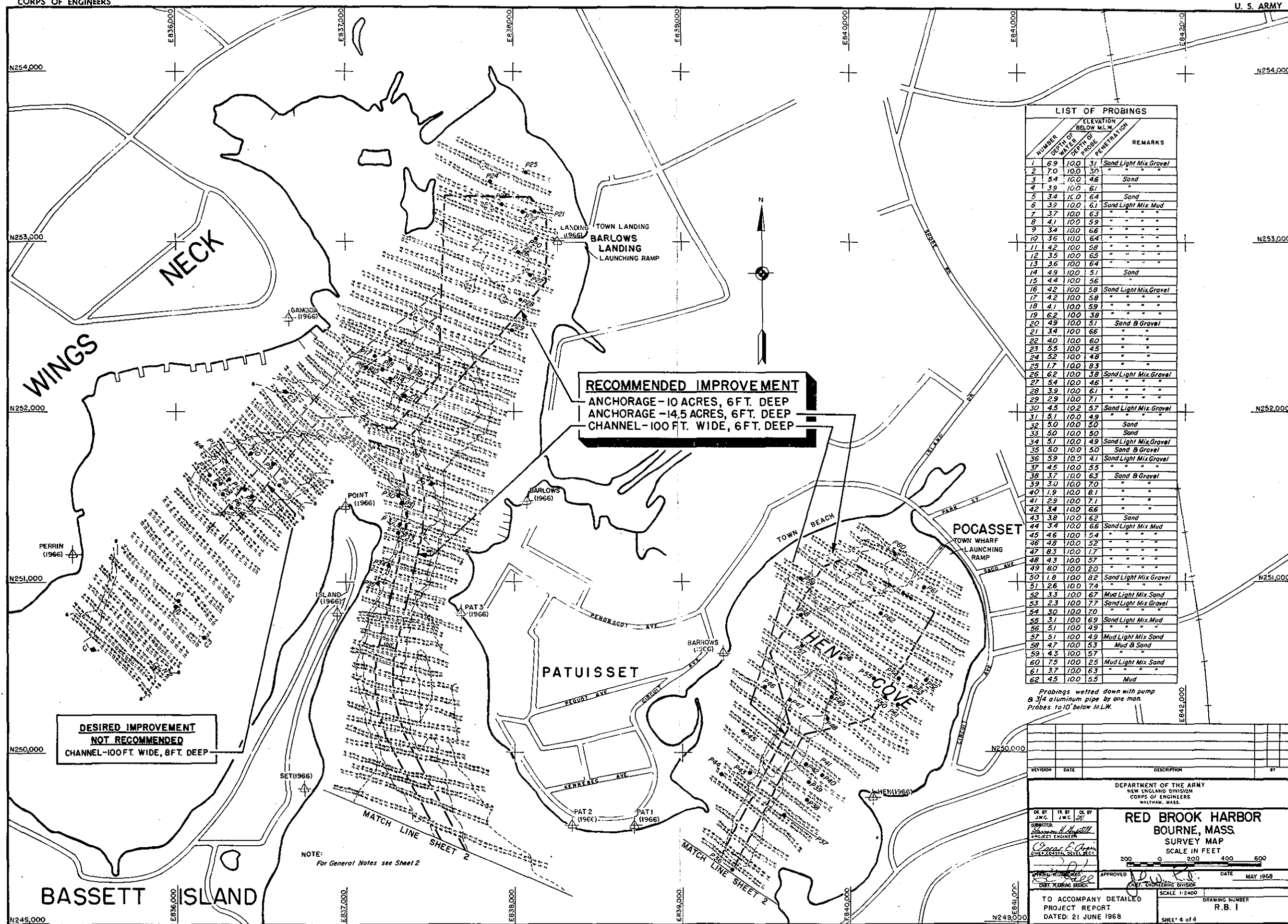
1. Maps - 4 Plates
2. Appendix A - Comments  
of Federal Agencies
3. Appendix B - U.S. Coast  
Guard Report
4. Appendix C - Letters by  
Local Interests













APPENDIX A  
UNITED STATES  
DEPARTMENT OF THE INTERIOR  
FISH AND WILDLIFE SERVICE  
BUREAU OF SPORT FISHERIES AND WILDLIFE  
U. S. POST OFFICE AND COURTHOUSE  
BOSTON, MASSACHUSETTS 02109

October 28, 1965

Division Engineer  
New England Division  
U. S. Army Corps of Engineers  
424 Trapelo Road  
Waltham, Massachusetts 02154

Dear Sir:

This constitutes our fish and wildlife conservation and development report on the navigation improvements project for Red Brook Harbor, Bourne, Massachusetts, which you are presently studying under authority of Section 107 of the River and Harbor Act approved July 14, 1960. This report was prepared under authority of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661-666 inc.), in cooperation with the Massachusetts Division of Marine Fisheries and Division of Fisheries and Game. The report has the concurrence of those agencies as indicated by their letters dated October 21, 1965 and October 15, 1965, respectively. It has been coordinated with the Bureau of Commercial Fisheries and also represents its views.

It is our understanding that navigational improvements to be considered include the improvement of the existing channels leading from deep waters of Pocasset Harbor in Hen Cove, around the northern and southern ends of Bassett Island, and into the entrance of Red Brook Harbor. In addition to channels into Red Brook Harbor and Hen Cove, channels are desired into Barlow's Landing on the north and into Hospital Cove on the south, plus suitable anchorage in each of these areas.

This harbor complex is used primarily by recreational boaters summering in this very heavily-developed Cape Cod vacation area. Two large marinas or boat yards are located in Red Brook Harbor.

The entire Buzzards Bay area, including the large cove lying between Wings Cove and Scraggy Neck in which the project is

located, supports an outstanding finfish resource. The following fish species are sufficiently abundant in these waters to constitute an excellent sport fishery: black sea bass, striped bass, bluefish, bonito, Atlantic cod, summer flounder, winter flounder, northern kingfish, Atlantic mackerel, pollock, scup, American shad, American smelt, tautog, Atlantic tomcod, and white perch. These waters also serve as an important spawning or nursery area for many species of sport and commercial fish. These include winter flounder, American shad, American smelt, scup, white perch, black sea bass, tautog, Atlantic herring, Atlantic menhaden, alewife, cunner, butterfish, northern puffer, and bluefish, as well as many species of bait fish. The project area supports an important segment of this outstanding fishery.

An abundant shellfish resource is found throughout these waters, and the Red Brook Harbor area produces commercial quantities of hard clams (quahogs) and soft-shelled clams. The adjacent Hen Cove is an outstanding producer of hard clams. Both the hard clams and soft-shelled clams are eagerly sought by 'mess' diggers. There are no commercial fishing vessels operating out of this harbor. Moored here, however, are a few shallow draft boats owned by the shellfish tongs and bull-rake operators.

Waterfowl make moderate to heavy use of this large bay complex during migration periods while lesser numbers winter in the area. Waterfowl hunter-use is not particularly heavy although hunting opportunities are excellent.

The dredging of the channels and anchorages as described above will not seriously damage the fish and wildlife resources. A temporary loss to the shellfish resource can be expected within the areas to be dredged. However, shellfish will repopulate these dredged channel areas and in a short time they will become a harvestable resource. Shellfish quickly re-established themselves in areas dredged in the past in both Red Brook Harbor and Hen Cove. It can be expected that the same will be true in the case of any new dredging within the harbor. The dredging aspect of the project will have no effect on the finfish and waterfowl resources.

The marsh along the south side of the Wings Neck causeway should not be used as a spoiling area. There are several acres of good salt marsh in this unit that contribute to the high productivity of these waters. This irreplaceable resource should not be destroyed. The preferable method of spoil disposal from the fish and wildlife standpoint is to deposit it on an approved dumping ground in Buzzards Bay; however, we would have no objection to placing the spoil on the nearby beaches or on any of the upland areas.

The project would not benefit the commercial fishery.

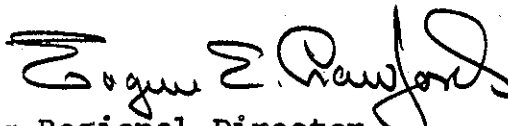
It is recommended:

1. That no spoil be deposited on the marsh along the south side of Wings Neck causeway.

2. That spoil be deposited on an approved dumping ground in Buzzards Bay; or (as a second choice) on nearby beaches or upland areas.

It is anticipated that additional studies by this Bureau will not be necessary. However, should the final plan for navigational improvement differ markedly from the probable plan presented in this report, we should be informed so that we can prepare another report. Early notification will be appreciated.

Sincerely yours,

  
Acting Regional Director



UNITED STATES  
DEPARTMENT OF THE INTERIOR  
FISH AND WILDLIFE SERVICE  
BUREAU OF SPORT FISHERIES AND WILDLIFE  
U. S. POST OFFICE AND COURTHOUSE  
BOSTON, MASSACHUSETTS 02109

May 7, 1968

Division Engineer  
U. S. Army Engineer Division, New England  
Corps of Engineers  
424 Trapelo Road  
Waltham, Massachusetts

Dear Sir:

This replies to Mr. Leslie's April 24 letter concerning changes in your plans for navigational improvements on the Red Brook Harbor, Massachusetts project.

In comparison to the plan described in our October 28, 1965 conservation and development report, the current plan represents a reduction in magnitude. The present plan provides for dredging an entrance channel 100 feet wide into a 14.5-acre anchorage at Hen Cove and a similar channel into a 10-acre anchorage at Barlows Landing all to a depth of six feet below mean low water rather than an 8-foot depth as previously planned. Sufficient depth is available in the existing channels around Bassett Island and in Hospital Cove and Red Brook Harbor Cove to meet local demands; consequently, the dredging of these areas, as initially planned, will not be necessary. All spoil will be placed in Buzzards Bay.

Since the project plans represent a considerable reduction in scope and all spoil will be dumped at sea, we have no objections to the current plans. Please advise us of the area being considered for spoil disposal prior to dredging operations so that we can investigate and report on this phase of the project.

We appreciate your advising us of your current project plans.

Sincerely yours,

*Richard E. Griffith*  
Regional Director





UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF OUTDOOR RECREATION  
128 N. BROAD STREET  
PHILADELPHIA, PENNSYLVANIA 19102

IN REPLY REFER TO:

April 25, 1968

Division Engineer  
Corps of Engineers  
New England Division  
424 Trapelo Road  
Waltham, Massachusetts 02154

Dear Sir:


We have reviewed your March 8 request regarding the Bureau's views and comments on the proposed navigation improvements at Red Brook Harbor, Bourne, Massachusetts. Without benefit of an in-depth study or on-site inspection, we generally agree with your statement of increased needs for additional boating facilities in the Bourne area.

As Planning Aid information, we note that the Boating Almanac, 1967, Volume 1, lists one public landing, 42 slips and 90 moorings within Red Brook Harbor. "The 1965 Survey of Outdoor Recreation Activities" (BOR, October 1967) indicated a 62 percent participation increase in sailing from 1960 to 1965 and an 18 percent participation increase in general boating.

As far as we know, there is no conflict of interest regarding recreation in the proposed navigation improvement. We are forwarding a copy of this letter to Robert Yasi, our State Liaison Officer, responsible for the maintenance of the Statewide Comprehensive Outdoor Recreation Plan.

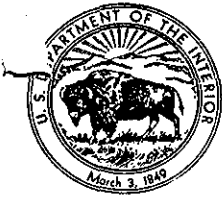
Thank you for this opportunity to express our views and comments.

Sincerely yours,

  
Rolland B. Handley  
Regional Director



The \$7 Annual Golden Eagle Passport  
admits carload of people year-long to  
all designated Federal recreation areas



UNITED STATES  
DEPARTMENT OF THE INTERIOR  
OFFICE OF THE SECRETARY  
NORTHEAST REGION  
JOHN F. KENNEDY FEDERAL BUILDING  
ROOM 2003 J & K  
BOSTON, MASSACHUSETTS 02203

September 16, 1968

Mr. John Wm. Leslie  
Chief, Engineering Division  
New England Division, Corps of Engineers  
U.S. Department of the Army  
424 Trapelo Road  
Waltham, Massachusetts 02154

Dear Mr. Leslie:

The opportunity to comment on the proposed navigation improvement project at Red Brook Harbor, Bourne, Massachusetts is appreciated.

We are pleased to note that in the interest of pollution prevention and control local interests will be required to establish regulations prohibiting the discharge of untreated sewage, garbage and other pollutants in the waters of the harbor.

The project involves the dredging and disposal of approximately 70,000 cubic yards of material. It is recommended that prior to construction, the method of disposal be coordinated with the Massachusetts Division of Water Pollution Control; and that prospective contractors be informed that their operations must be compatible with the existing state standards of water quality.

Sincerely yours,

Mark Abelson  
Regional Coordinator

cc: Mass. Div. of Water Pollution  
Control  
James Lambie, FWPCA, Needham,  
Mass.



APPENDIX B

DEPARTMENT OF TRANSPORTATION  
UNITED STATES COAST GUARD

Address reply to:  
COMMANDER (o-1)  
First Coast Guard District  
J. F. Kennedy Federal Bldg.  
Government Center  
Boston, Mass. 02203  
TEL: 617-223-3634

3260  
14 June 1968

From: Commander, First Coast Guard District  
To: Division Engineer, U. S. Army Corps of Engineers,  
New England Division

Subj: A/N Improvements, Red Brook Harbor, Bourne, Massachusetts

Ref: (a) Corps of Engineers ltr NEDED-R of 14 May 1968  
(b) CCGD1 (o-1) ltr 3260 of 8 March 1968

1. Your proposed extension of the entrance channels at Barlows Landing and Hen Cove as set forth in reference (a) has been reviewed. At this time it is estimated that three (3) additional aids will be required in addition to the two (2) proposed aids required for the Hen Cove improvement as previously set forth in reference (b).
2. The three (3) additional buoy locations are marked in green and red on the enclosed chart.
3. The estimated costs are one thousand fifty dollars (\$1,050) for preparation and installation and one hundred forty-five dollars (\$145) annual maintenance for the five (5) aids.

  
H. A. CAMPBELL, JR.  
By direction

Encl: (1) U. S. Army Chart of Red Brook Harbor with Proposed Aids.



APPENDIX C

# TOWN OF BOURNE

BOARD OF SELECTMEN

BOURNE, MASS. 02532

TEL. 759-4486 OR 4487



PHILIP T. SANFORD, CHAIRMAN  
ERNEST H. FORNI  
JAMES R. MCMAHON, JR.

March 25, 1968

Colonel Remi O. Renier  
Division Engineer  
New England Division, Corps of Engineers  
Department of the Army  
424 Trapelo Road  
Waltham, Massachusetts 02154

Dear Colonel Renier:

By letter dated 1 June 1965, the Town of Bourne formally requested an investigation be made by the Corps of Engineers of the need for dredging an 8-foot deep, 100-foot wide channel from Pocasset Harbor around both ends of Bassett Island with branch channels of the same dimensions leading into Barlows Landing, Hen Cove, Red Brook Harbor and Hospital Cove; and establishment of a suitable anchorage 8 feet deep at each of these locations. The study was requested and subsequently conducted under authority of Section 107 of the 1960 River and Harbor Act.

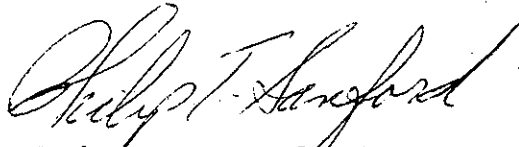
A meeting was held in Bourne on 12 March 1968 with an engineer from the Corps of Engineers and a representative of the Massachusetts Department of Public Works, Division of Waterways, to review the plan of improvement developed by the Corps and the attendant requirements of local cooperation. The plan reviewed would provide for an entrance channel 6 feet deep and 100 feet wide from deep water in Red Brook Harbor into a 14.5-acre, 6-foot deep anchorage at Hen Cove and a 10-acre, 6-foot deep anchorage at Barlows Landing. It is our understanding that the two other areas, that were desired for improvement, Red Brook Harbor proper and Hen Cove, were found to have depth in excess of six feet, thus not requiring any further improvement dredging to accommodate the prospective recreational fleet.

It is understood that the cost of construction of the project is now estimated to be \$230,000, of which non-Federal interests will be required to share, in the form of a cash contribution at the time of construction, an amount equal to 50 percent of the total cost. The Commonwealth of Massachusetts has indicated a willingness to share in the non-Federal cost. In addition to the cash contribution, the Town of Bourne will be required to provide an adequate public landing at Barlows Landing, as well as one at Hen Cove, each with berths commensurate to the Federal anchorage depth, including provisions for the sale of motor fuel, lubricants, potable water and adequate parking space. The landings would be open to all on equal terms.

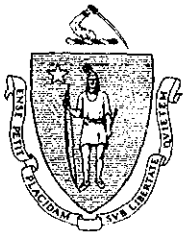
We consider that the proposed plan of improvement will meet the needs of recreational navigation and that the Town of Bourne will be willing and able to meet the requirements of local cooperation when needed.

It is hoped that this letter, with that of the State Division of Waterways, will enable you to complete the study report for the Federal small-boat navigation improvement needed for Red Brook Harbor.

Sincerely,

A handwritten signature in cursive script, appearing to read "Philip T. Sanford".

Chairman, Board of Selectmen



APPENDIX C

*The Commonwealth of Massachusetts*

*Department of Public Works*

*Office of the Commissioner*

*100 Nashua Street, Boston 02114*

March 29, 1968

Remi O. Renier, Colonel  
District Engineer-New England Division  
U. S. Army Corps of Engineers  
424 Trapelo Road,  
Waltham, Massachusetts

Dear Colonel Renier:

Re: NEDED-R

In reply to your letter of December 27, 1967, relative to the proposed improvement of Red Brook Harbor, Bourne and Lagoon Pond, Tisbury in which you request our comments on same, please be informed that this Department would be willing to meet the requirements of local cooperation subject to the following conditions:

1. The enactment of an enabling statute by the General Court;
2. The appropriation of sufficient funds by the General Court to provide the Commonwealth's share of the local contribution;
3. Execution of a satisfactory assurance by the Towns of Bourne and Tisbury; and,
4. Deposit of the towns' share of the local contribution with the State Treasurer.

On approval of the project and subsequent allotment of the Federal funds we would be happy to file both the necessary enabling Bill and the appropriation request with the General Court for its approval.

Satisfaction of the above 3rd and 4th condition are necessarily contingent upon action taken by the Towns of Bourne and Tisbury.

Very truly yours,

  
JOHN D. WARNER  
Associate Commissioner



JOHN A. VOLPE  
GOVERNOR

THE COMMONWEALTH OF MASSACHUSETTS  
EXECUTIVE DEPARTMENT  
STATE HOUSE, BOSTON

October 10, 1968

Colonel Frank P. Bane  
U. S. Army Corps of Engineers  
New England Division  
424 Trapelo Road  
Waltham, Massachusetts 02154

Dear Colonel Bane:

This is in reply to your letter of September 26 concerning the Federal navigation improvement at Red Brook Harbor in Bourne, Massachusetts.

Red Brook Harbor could well be developed into a small boat recreational facility. Our Division of Waterways engineers have attended several meetings and hearings in connection with the Corps' study of this area. On October 7, 1965, the Bourne Harbor Committee was advised to initiate legislation which would enable the Division of Waterways to participate in this project. To the best of my knowledge this was never done; therefore, the Commonwealth is not in a position to cooperatively participate in this project at the present time.

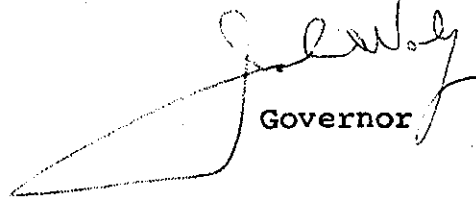
Since 1954 approximately one-quarter of a million dollars in State funds has been spent improving Red Brook Harbor. I have no reason to believe that the General Court of Massachusetts would not authorize participation in a cooperative

Colonel Bane

-2-

improvement here and eventually appropriate the required matching funds, but you must realize that I am not in a position to forecast legislative deliberations.

Sincerely,

A handwritten signature in cursive script, appearing to read "G. L. ...", is written over the word "Governor". The signature is fluid and extends to the left with a long horizontal stroke.

Governor